

USC Dornsife College of Letters,
Arts and Sciences

**HBIO360 – Nutrition and Disease (4 units)
Fall 2024**

Lectures: Tue/Thu 3:30-4:50 pm

Location: ZHS 252

Instructor: Gioia Polidori, PhD

Office: AHF B40

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Telephone: 213.740.3337

Lab sections:

38542R Wednesday 6:00-7:50 pm

38543R Thursday 9:00-10:50 am

38544R Thursday 11:00-12:50 pm

38545R Friday 9:00-10:50 am

38546R Friday 11:00- 12:50pm

Instructors:

Lisa Le: lelisa@usc.edu

Charles Crawford: charles.crawford@usc.edu

Course Description

Principles of diet therapy for the prevention and treatment of human disease.

Prerequisite: BISC 220L

Learning Objectives

- Identify, locate, and describe the structure/function of major organ systems of the human body
- Illustrate the relationship between nutritional imbalances and disease
- Correlate molecular, cytological and histological changes with manifestations of selected human diseases
- Compile relevant sources of scientific evidence to solve case studies and effectively present to peers selected topics in human disease
- Evaluate how nutritional concepts may be used for the resolution of sociocultural issues

- Determine and discuss nutrient needs for diverse populations taking into account the various dimensions of human diversity such as age, disability, ethnicity, ancestry, gender, language, religion, social status and body diversity.

I. Text Required

Nutrition Therapy & Pathophysiology; Nelms M, Sucher KP, Lacey K, Roth SL (eds). Wadsworth Cengage Learning. 3rd Edition.

II. Description and Assessment of Assignments

- Class material will be evaluated via quizzes, exams and case studies.
- **Quizzes** will be given during lectures and will be based on the material presented on the same day.
- **Case studies:** Case studies will be completed throughout the semester and will focus on the pathophysiology and nutritional requirements in different diseases. Students will be guided to perform literature searches to discover and develop their own solutions to real case problems related to human disease and placed within sociocultural contexts. Students will work on case studies in groups of 3-5 and each group will submit the answers at the end of class.

III. Grading Breakdown

| Assignment | Points | % of Grade |
|--------------------|--------|------------|
| Midterm 1 | 250 | 25 |
| Midterm 2 | 250 | 25 |
| Final Exam | 250 | 25 |
| Case Studies | 200 | 20 |
| Quizzes | 50 | 5 |
| TOTAL | 1000 | 100 |
| JEP (Extra Credit) | 25 | 2.5 |

IV. Additional Policies

- The grading scale is based on the traditional scale as follows:

| | | |
|-------------------|-----------------|------------------|
| | A (≥93%) | A- (≥90%) |
| B+ (≥87%) | B (≥83%) | B- (≥80%) |
| C+ (≥77%) | C (≥73%) | C- (≥70%) |
| D+ (≥67%) | D (≥63%) | D- (≥60%) |
| F (≤59.9%) | | |

- A midterm exam can be taken after the specified date only if the student has a documented excuse.
- A request to take a make-up exam must be accompanied by evidence of necessity (ie: letter from a doctor, interview email...) and must be made before the date of the scheduled exam.
- Lecture slides will be posted on blackboard. Class notes and textbook information will form the basis of the material that will be on the exams. If you attend class regularly, you will be updated on the status of lecture notes and course material/announcements.
- Case Studies: Attendance to case studies is mandatory. Students should contact the lab instructor via email if they have to miss a case study. Case studies are completed in

class with the team. If a student has to miss a case study because of medical reason, interviews, or for any other reasonable excuse, they need to reach out to the instructor ASAP. Students who arrive more than 15 minutes late on case study days will be considered absent for the case study.

- Late Work Policy: Case studies are due at the end of class period. No late work will be accepted unless the student receives prior approval from the course instructor.
- A maximum of 2 case studies can be made up. If a student has to miss a case study, they must communicate with the instructor ahead of time. In that case they can either join a different lab section (the same week) or alternatively they can complete a different case study on their own at the end of the semester.
- Quiz submission: quizzes are in-class activities so will only be available during class time for students present in class. Students who have to miss class should notify the instructor to request an exemption. Submitting quizzes when not present in class will be considered a violation of academic integrity.
- As our understanding of science is constantly evolving, so are the terms used in scientific discussions. Therefore, there are terms and concepts that are in the process of being updated by the scientific community but remain outdated, and do not reflect our current values of equity or inclusivity (e.g., the word obesity or that current medical nutritional guidelines utilize a binary dichotomy of men vs women). Despite our own personal values and beliefs, such terms and concepts are part of a global science curriculum and thus will be covered in this class in order to best prepare students professionally. We acknowledge the fact that terms and concepts are in the process of being updated to better reflect our evolving understanding of science and humanity, and hope that you and your colleagues will continue to advocate for and build an equitable academic community in your classrooms and beyond

V. Tentative Lecture Schedule

| Date | Lecture Topic | Nelms | Case Study |
|---------|---|-------|-------------------|
| Aug 27 | Introduction | | |
| Aug 29 | Nutrition Care Process | | Intro |
| Sept 3 | Nutrition Assessment | 2 | 1. Dietary |
| Sept 5 | Nutrition Intervention | 3 | Assessment |
| Sept 10 | Enteral & Parenteral Nutrition | 4 | 2. Dietary |
| Sept 12 | Energy Balance I | 5 | intervention |
| Sept 17 | Energy Balance II | 5 | |
| Sept 19 | Pathophysiology of the Cardiovascular System I | 12 | 3. Obesity |
| Sept 24 | Pathophysiology of the Cardiovascular System II | 12 | 4. Myocardial |
| Sept 26 | review | 12 | Infarction |
| Oct 1 | Midterm I | | |
| Oct 3 | Pathophysiology of the Upper GI tract I | 15 | 5. Hypertension |
| Oct 8 | Pathophysiology of the Upper GI tract II | 15 | 6. GERD |
| Oct 15 | Pathophysiology of the Lower GI tract I | 14 | |
| Oct 17 | Pathophysiology of the Lower GI tract II | | |
| Oct 22 | Diabetes I | | 7. Celiac Disease |
| Oct 24 | Diabetes II | 17 | |
| Oct 29 | Pathophysiology of the Liver & Gallbladder I | | 8. T1DM |

| | | | |
|---------------|--|----|-------------------|
| Oct 31 | Pathophysiology of the Liver & Gallbladder II | 16 | 9. Pancreatitis |
| Nov 5 | Review | 16 | |
| Nov 7 | Midterm II | | 10. Hepatitis |
| Nov 12 | Pathophysiology of the Hematological System I | | |
| Nov 14 | Pathophysiology of the Hematological System II | 18 | 11. Osteoporosis |
| Nov 19 | Pathophysiology of the Musculoskeletal System I | 18 | |
| Nov 21 | Pathophysiology of the Musculoskeletal System II | 19 | 12. Anemia |
| Nov 26 | Cancer I | 19 | |
| Nov 28 | Thanksgiving | 22 | No Lab on TG week |
| Dec 3 | Cancer II | 22 | 13. Cancer |
| Dec 5 | Review | 25 | |
| | Final Exam (see schedule of classes) | 25 | |
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VI. Support Systems

A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* <http://emergency.usc.edu/> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

VII. Academic Conduct

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

VIII. Academic Integrity Violations

Students who violate University standards of academic integrity are subject to disciplinary sanctions, including failure in the course and suspension from the University. Since dishonesty in any form harms the individual, other students and the University, academic integrity policies will be strictly enforced.

IX. Disruptive and Threatening Behavior

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* <http://equity.usc.edu/> or to the *Department of Public Safety* <http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us>. This is important for the safety whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential support, and the sexual assault resource center webpage sarc@usc.edu describes reporting options and other resources.

X. Support Systems:

Student Health Counseling Services - (213) 740-7711 – 24/7 on call
engemannshc.usc.edu/counseling

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-4900 – 24/7 on call
engemannshc.usc.edu/rsvp

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) | Title IX - (213) 740-5086
equity.usc.edu, titleix.usc.edu

Information about how to get help or help a survivor of harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following protected characteristics: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations.

Bias Assessment Response and Support - (213) 740-2421
studentaffairs.usc.edu/bias-assessment-response-support

Avenue to report incidents of bias, hate crimes, and microaggressions for appropriate investigation and response.

The Office of Disability Services and Programs - (213) 740-0776
dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Support and Advocacy - (213) 821-4710
studentaffairs.usc.edu/ssa

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101
diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call
dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call
dps.usc.edu

Non-emergency assistance or information.